EDISON

Alabama Graphite

Accessing liquidity and financing optionality

Westwater Resources takeover

Metals & mining

Westwater Resources (NASDAQ:WWR) is set to complete its all-share takeover of Alabama Graphite during CY Q218, subject to necessary approvals. The value of the deal is tethered to WWR's share price and currently implies a total value for Alabama of c US$9m. This compares to an EV/t value for Coosa's in-situ graphite resource of US$14m and our tentative, undiluted, post-tax DCF estimate for the project's Phase 1 of US$71m (using reduced Phase 1 capex of US$30m and a 10% discount rate). The deal is timely; in reality, the financing of Coosa under the Alabama banner was proving problematic and we see a greater chance of WWR developing the asset using its own network of contacts and incumbent financing arrangements.

Year end	Revenue (C$m)	PBT* (C$m)	EPS* (c)	DPS (c)	P/E (x)	Yield (%)
08/15	0.0	(2.2)	(2.3)	0.0	N/A	N/A
08/16	0.0	(1.8)	(1.5)	0.0	N/A	N/A
08/17	0.0	(3.2)	(2.3)	0.0	N/A	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Coosa brings a full suite of battery products to WWR

Unlike many of its graphite peers, Alabama is focused on developing a graphite mine and processing plant in Coosa County, Alabama, US to produce battery-ready graphite end-products. It has four viable and proven products for battery applications. These are a purified micronized graphite (PMG, marketed under the name ULTRA-PMG™), a coated spherical purified graphite (ULTRA-CSPG™), a silicon-enhanced ULTRA-CSPG™ and a delaminated expanded graphite (ULTRA-DEXDG™) product.

Alabama's technical expertise complements WWR

We note the extensive graphite technical expertise of the Alabama board and management team, and also WWR's retention of Mr Dinwoodie (announced on 1 March 2018) and Dr Gareth Hatch (13 March 2018) as VP of marketing and technical advisor, respectively.

US made, US based and US listed

Coosa is a US-located graphite project, which will feed into US-based battery manufacturers and the burgeoning EV market there. Once acquired by Westwater, it will be part of a NASDAQ, New York listed company. US-sourced demand for graphite is supported by the presidential executive order relating to critical minerals made in December 2017.

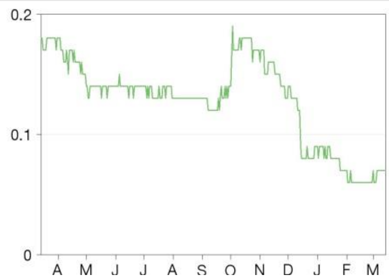
Valuation: EV/t basis makes deal look fair value

Our tentative, post-tax, undiluted DCF valuation of Coosa's Phase 1 based on the 2015 preliminary economic assessment (PEA), with initial Phase 1 capex reduced to US$30m (in line with Westwater's guidance), is US$71m; our EV/t valuation for Coosa's resources is US$14m. As such comparing the WWR deal value to the Coosa PEA outcome appears favourable to the acquirer. However, compared to the in-situ value of Coosa's resource derived using market data, and taking into account uncertainty with funding, we consider the deal near to fair value.

15 March 2018

Price	**C$0.07**
Market cap	**C$10m**
	US$/C$:0.79
Net cash (C$m) at 30 Nov 2017	0.1
Shares in issue	145.3m
Free float	96%
Code	CSPG
Primary exchange	TSX-V
Secondary exchange	OTCQB/Frankfurt

Share price performance



%	1m	3m	12m
Abs	25.0	(16.7)	(58.3)
Rel (local)	22.4	(14.7)	(59.1)
52-week high/low		C$0.19	C$0.06

Business description

Alabama Graphite is positioning itself as a major sourced-and-made-in-US natural flake battery graphite producer for the LiB supply chain, in addition to the lithium primary, alkaline and lead acid battery markets. Its main project, Coosa, is strategically located in Alabama, US. The company will not sell any traditional graphite concentrate, which is the core business model for all other graphite development companies presently.

Next events

Deal completion	End April/May

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Edison profile page

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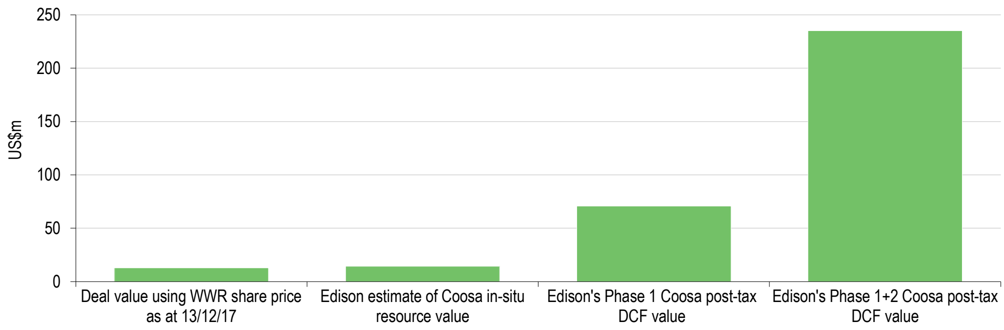
Westwater deal

We take a view on the value of the imminent Westwater takeover of Alabama Graphite using an in-situ value of graphite and a comparison of the deal's value to our estimate of Coosa's value on a scenario-driven DCF basis. We also take a closer look at the qualitative benefits of Alabama's takeover by WWR. We see clear benefit to the Coosa Graphite Project development in the combination of Alabama's technical graphite expertise with WWR's greater ability to access capital and fund financing options.

The following exhibit gives a comparison of the deal value as priced following the announcement on 13 December 2017, showing values derived by Edison based on an EV/t approach, a post-tax DCF value of Phase 1 only and a value for Coosa based on both Phase 1 and 2 being constructed.

Exhibit 1: Comparison of WWR deal to Edison's project valuations



Source: Edison Investment Research

In-situ valuation: Coosa's resource in line with deal value at outset

The following table provides a value for Alabama's in-situ graphite resource based on EV/t values derived from a broad unbiased group of graphite peers across the London, Canadian and Australian exchanges.

Exhibit 2: In-situ resource valuation

Parameter	Unit	Value
In-situ graphite value	US$/t	4.02
CSPG shares in issue	Number	145,315,187
In-situ value of Coosa graphite resource	US$m	14,258,940
WWR deal value as priced 13/12/17	US$m	12,787,736
% difference to WWR share price value	%	18

Source: Edison Investment Research

Our in-situ resource value for Alabama of US$14.3m compares favourably with the US12.8m value of the WWR deal first announced on 13 December, using the then prevailing share price of US$1.11. Our EV/t in-situ graphite value of US$4.02/t reflects market data during August 2017 and, as such, is relatively close to the deal being announced and should also reflect the current state of the unbiased junior developer graphite peer group used relatively accurately.

Coosa DCF value dwarfs deal price

Our DCF valuation, as presented below, has been adjusted to reflect Westwater's project initial optimisation study announcement on 1 March 2018. The main adjustment we have made to our model is a reduction in planned Phase 1 capex from US$43.4m to US$30m. However, we note that other factors that may affect our valuation are not fully disclosed (eg the exact mix of graphite products to be sold) and we await formal release of this optimisation study to fully reflect any changes in our valuation of Coosa.

Coosa's unoptimised 2015 PEA contemplates a two-phase development approach, allowing the owner to tailor its output to the requirements of prevailing CSPG graphite market growth rates. This is critical when the size of the electric vehicle (EV) market is still relatively minuscule compared to its fossil fuel counterparts. Phase 1 of Coosa's development (pending capital raisings) produces 5ktpa; valuing this cash flow stream (with first revenues occurring in FY20) results in the following DCF valuations using a 10% discount rate to reflect general equity risk and assuming no dilution to account for the potential funding options of the project. We note that funding remains one of the key execution risks.

Exhibit 3: Undiluted DCF valuations pre- and post-tax based on adjusted 2015 Coosa PEA

Valuation timeframe	Currency	Discount rate	Value
Pre-tax Phase 1 (to 2027)	US$000	10%	101,796
Pre-tax Phase 1 and Phase 2	US$000	10%	337,134
Post-tax Phase 1 (to 2027)	US$000	10%	70,777
Post-tax Phase 1 and Phase 2	US$000	10%	235,074

Source: Edison Investment Research

Both values use a CSPG price of US$9,000/t, a PMG price of US$2,000/t and a 10% discount rate to reflect general equity risk. Commodity price forecasts remain a concern for any battery metal project. The above valuations do not take account of the US government's reduction in corporate tax from 35% to 21%, which came into effect on 1 January 2018. We await an optimised Coosa technical study to undertake this analysis.

Note that the above DCF valuations are based on the 2015 Coosa PEA and differ from our initial base case DDF (dividend discount) valuation published in our initiation report, as we have also removed the effects of Alabama's financial accounts from our valuation. For an in-depth view of our original valuation of Coosa based on the project's 2015 PEA, please refer to our initiation report, Proven battery graphite for the US and beyond, published in July 2017. Note that this valuation includes the effects of Alabama's financial accounts.

Alabama's graphite expertise retained in part

We have long viewed the deep technical graphite experience of Alabama's management team as being core to transforming the complex technology of a graphite project into a fully vertically integrated mine and market supplier of battery-ready graphite products. This has been evident throughout our experience of dealing with the company and reinforces our confidence that the company's positive technical announcements prove that Coosa's low in-situ grade graphite resource is indeed a viable option in the US for sourcing graphite for the anticipated electrification of the global automotive fleet and batteries in general. As with any company or project takeover, successful retention of the embedded management knowledge base is a sensitivity, even more so here, given the nature of the product and critical stage of the project's development. A de-risking event to management's retention are the recent announcements by WWR that it will retain Mr T Dinwoodie as VP of marketing and Dr Gareth Hatch as technical advisor. Dr Hatch's experience is detailed below and we view his involvement in the development of Coosa as integral to its success.

Gareth Hatch Retained as Technical Advisor to Westwater Resources

WWR announced 13 March 2018 the addition of Gareth Hatch as a Technical Advisor to its team. DR Hatch is currently CEO of Alabama and is also co-founder, President and Director of Innovations Metals Corp, a private Toronto-based company specialising in cost effective processing solutions for metals used in the high-tech and green energy, such as rare-earth elements separation, lithium, nickel and cobalt. Dr. Hatch is the co-inventor of IMC's patent-pending purification process for these metals. Dr. Hatch is also a Founding Principal of Technology Metals Research LLC, a well-known advisory and consulting firm operating in the critical-materials sector. He was previously Director of Technology at U.S.-based Dexter Magnetic Technologies, Inc., and holds five patents on a variety of magnetic devices.

During 2014-2016, Dr. Hatch served as Principal Investigator on a multi-million-dollar research program on innovative processes for Rare Earth Elements, funded by the U.S. Army Research Laboratory, part of the US Department of Defense (DoD). He has advised the DoD, NATO, the European Commission, the U.K. Parliament and members of the U.S. Congress on threats to the strategic-materials supply chain. Dr. Hatch has authored numerous peer-reviewed journal articles and has been cited by reports published by the DoD, the U.S. General Accountability Office, the U.S. Department of Energy, the U.S. Geological Survey, the British Geological Survey, the EC and many others.

Viability thresholds met

The nuances of each of the graphite products due to be sold by Coosa (ie ULTRA-PMG™, silicon-enhanced ULTRA-CSPG™, ULTRA-CSPG™ and ULTRA-DEXDG™) are too extensive to cover fully here but are available on the company's website.

We would highlight the nuclear grade purity (ie 99.99997% total graphitic carbon) achieved in the laboratory environment as a meaningful indication of the viability of Coosa's graphite as feedstock for in-house processing to downstream battery graphite standards. Coosa's graphite has also been demonstrated to be easily processed to at least 99.99% purity across all the flake size fractions present in the Coosa resource. Further testing of Coosa graphite has also demonstrated very good ability to hold charge (the term 'dynamic charge acceptance' describes a cell's ability to absorb electrical charge in relation to the capacity of the battery).

Electric vehicle market growth – the key factor

According to the International Energy Agency's (IEA) Global EV Outlook 2017, the worldwide stock of electric vehicles rose to over 2m in 2016, having reached 1.26m in 2015. Further, global electric vehicle stock rose by >70% between 2014 and 2015 (IEA data), with 750,000 electric vehicles sold in 2016 representing a y-o-y growth of 36% and market penetration of 0.2% compared with total global stock of cars, regardless of type. This small market penetration is of course expected to grow as mass adoption of electric vehicles is achieved via lowering of electric vehicle prices, as well as the installation of required infrastructure, and the optimisation and refinement of existing electric vehicle technologies to drive confidence in consumer appetite.

A negative against the rise of electric vehicles and the demand for raw materials needed to build these EVs is the declining rate in electric vehicle sales y-o-y. In 2016, the electric car stock growth was 60%, down from 77% in 2015 and 85% in 2014. Although this growth rate is declining, the 60% increase for 2016 is still very healthy. It is of course noted that these growth rates reflect a relatively small sales base and growth rates inevitably reduce as the electric vehicle stock increases.

Financials

Alabama's last reported financial statements covered the period ending 30 November 2017. As of this date, the company had cash of C$64k, after expenditures of C$0.6m. As a result of the proposed WWR takeover, no further financings have been secured by Alabama, which would normally throw doubt on its ability to continue as a going concern. However, assuming the takeover goes ahead as planned, future project financing will be the responsibility of Westwater which, as mentioned above, has now published (on 1 March 2018) its Coosa Project initial optimisation study. Compared to the 2015 PEA, financially, this points to lower capex (US$30m vs $43.4m), revenues starting from 2020 and positive cash flow now expected from 2021.

WWR issues convertible loan note to Alabama

Meanwhile, with current financing constraints starting to affect Alabama's ability to maintain itself as a going concern, WWR provided a working capital solution by issuing a convertible loan note to Alabama for up to US$2.0m. The note either converts to shares in Alabama (at WWR's discretion) or matures on 30 June 2018. The note carries an interest charge of 3%. With the acquisition expected to conclude after WWR's shareholder vote on 19 April 19 2018 following WWR's AGM, these funds should satisfy Alabama's current financial commitments and expenditures.

Should the secured loan be converted into Alabama shares, WWR would hold approximately a 7.5% interest in Alabama Graphite, assuming the full $2.0m is outstanding at the time of conversion.

Potential WWR capital sources for building out Coosa

As we have said previously, Coosa's viability as a battery-ready graphite project appears robust from the considerable amount of laboratory-scale testing undertaken so far. Therefore, in our view, the successful development of the Coosa project crucially depends on the securing of offtake agreements on commercial terms for the project's output. However, as for any project at this stage this is a chicken-and-egg situation in so far as potential customers may require firm signs of commitment that the project in question will be built. In its 1 March release, WWR announced the appointment of Alabama Graphite's president Tyler Dinwoodie to be vice president of marketing, effective on close of the acquisition.

So far, Alabama has secured non-commercial agreements and letters of intent for the purchase of Coosa's battery-ready graphite products. Note that the wider junior graphite development sector mirrors Alabama's difficulty in securing commercial offtake.

If WWR successfully acquires Alabama, it has two potentially adequate sources of capital to satisfy its revised capex estimate of US$30m for development of Phase 1 (ie an initial 5ktpa output of refined battery-ready graphite products). In committing to funding at least Phase 1 of Coosa and building its customer base, WWR may be better positioned to secure offtake agreements on commercial terms.

- WWR announced on 27 September 2017 that it entered into a common stock purchase agreement with Aspire Capital Fund, LLC. During the 30-month term of the agreement, Aspire Capital has committed to purchase, at WWR's request, up to US$22m of its common stock.
- WWR registered for sale up to 30m shares of common stock by Cantor Fitzgerald under a controlled equity offering sales agreement dated 14 April 2017. The number of shares ultimately offered for sale pursuant to this agreement is dependent on the number of shares WWR elects to sell.

Exhibit 4: Financial summary

Accounts: IFRS, year-end August (C$000s)	2015	2016	2017
Total revenues	0	0	0
Cost of sales	0	0	0
Gross profit	0	0	0
SG&A (expenses)	(1,869)	(1,752)	(3,209)
R&D costs	0	0	0
Other income/(expense)	0	0	0
Exceptionals and adjustments	0	0	0
Depreciation and amortisation	(2)	(1)	(1)
Reported EBIT	(1,871)	(1,753)	(3,211)
Finance income/(expense)	3	0	0
Other income/(expense)	153	24	4
Exceptionals and adjustments	(482)	0	0
Reported PBT	(2,198)	(1,729)	(3,207)
Income tax expense (includes exceptionals)	0	0	0
Reported net income	(2,198)	(1,729)	(3,207)
Basic average number of shares (m)	97	117	137
Basic EPS (C$)	(0.02)	(0.01)	(0.02)
Balance sheet			
Property, plant and equipment	4	3	2
Goodwill	0	0	0
Intangible assets	5,568	6,867	7,563
Other non-current assets	26	0	0
Total non-current assets	5,599	6,870	7,565
Cash and equivalents	2,086	96	509
Inventories	0	0	0
Trade and other receivables	40	38	49
Other current assets	229	182	94
Total current assets	2,355	315	652
Non-current loans and borrowings	0	0	0
Other non-current liabilities	0	0	0
Total non-current liabilities	0	0	0
Trade and other payables	424	521	496
Current loans and borrowings	0	0	0
Other current liabilities	0	0	0
Total current liabilities	424	521	496
Equity attributable to company	7,529	6,663	7,721
Non-controlling interest	0	0	0
Cash flow statement			
Profit for the year	(2,198)	(1,729)	(3,207)
Taxation expenses	0	0	0
Net finance expenses	0	0	0
EBIT	0	0	0
Depreciation and amortisation	2	1	1
Share based payments	664	222	795
Other adjustments	482	0	0
Movements in working capital	(273)	330	43
Interest paid / received	0	0	0
Income taxes paid	0	0	0
Cash from operations (CFO)	(1,323)	(1,176)	(2,368)
Capex	(1,826)	(1,395)	(748)
Acquisitions & disposals net	0	0	0
Other investing activities	(5)	(60)	60
Cash used in investing activities (CFIA)	(1,831)	(1,455)	(688)
Net proceeds from issue of shares	4,211	641	3,470
Movements in debt	(258)	0	0
Other financing activities	0	0	0
Cash from financing activities (CFF)	3,953	641	3,470
Currency translation differences and other	0	0	0
Increase/(decrease) in cash and equivalents	799	(1,990)	413
Currency translation differences and other	0	0	0
Cash and equivalents at end of period	2,086	96	509
Net (debt) cash	2,086	96	509
Movement in net (debt) cash over period	2,086	(1,990)	413

Source: Company accounts, Edison Investment Research

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